User's Manual of Digital Clamp Meter

I. General

This meter is a latest portable type 3 1/2 digit ARDCM (Auto Range Data Clamp Meter) of micropower launched by us. It can be used to measure ACV, DCV, AC, DC, resistance, diode forward voltage drop, circuit continuity, etc.

This meter has unique super-thin and super-small design and the Auto Power function. It is characterized by exquisiteness, firmness, simplicity for operation and convenience for carrying; thus it is a desirable tool for engineering design, labs, schools, field operations, home appliances servicing, etc!

II. Features

Max. allowed voltage between the measuring terminal and the ground: 600V(DC) or 600V(rms) insulation level: CAT Ⅱ

Pollution level: Ⅱ

Range: Auto;

Display: 3 1/2 digit LCD, max. display 1999; full symbol display; Font height: 12mm

Polarity: Automatic polarity display;

Auto power off: idle for 15min;

Key tone;

Full-range overload protection;

Low battery display: "⊟" occurs on the upper part of the LCD;

External dimensions: 195mm×60mm×36mm

Weight: Approx. 170 g (including battery);

Working voltage: 3V(1.5VAAA×2)

Working current: ＜1mA

Testing speed: 3times/s;

Working environment: 0℃~40℃(32℉～104℉), RH＜80%

III. Instructions of Keys: (trigger mode)

M-H: Max Hold: Press the key and the LCD display updates data and holds max.

F-S: Function Select: Used for the ACA/DCA switching and ACV/DCV switching.

D-H: Data Hold: Press this key and the LCD display holds data (menu) displayed currently; press it again to release the Data Hold.

IV. Technical Indicators

Accuracy: ± (% reading ＋ word count); Ambient temperature with accuracy ensured: (23±5)℃; RH＜75%; calibration warranty period as one year from ex-works date.

DCV (V⎓)

Range	Resolution	Accuracy
200mV	100uV	±(0.5%+3)
2V	1mV	
20V	10mV	
200V	100mV	
600V	1V	±(0.8%+3)

Input resistance: 10MΩ;

Overload protection: 700Vrms or 1,000Vp

ACV (V～)

Range	Resolution	Accuracy
2V	1mV	±(0.8%+5)
20V	10mV	
200V	100mV	
600V	1V	±(1.2%+5)

Input resistance: 10MΩ;

Frequency range: 40Hz～400Hz below 200V; 40Hz～100Hz /600V.

Display: mean (Sine virtual value)

Overload protection: 700Vrms or 1,000Vp

DC (A⎓)

Gear	Range	Resolution	Accuracy
uA	200uA	0.1uA	± (1.2%+3)
	2000uA	1uA	
mA	20mA	10uA	
	200mA	100uA	±(1.5%+3)

Overload protection: 0.2A/250V fuse

AC (A～)

Gear	Range	Resolution	Accuracy
uA	200uA	0.1uA	±(1.8%+3)
	2000uA	1uA	
mA	20mA	10uA	
	200mA	100uA	± (2.0%+3)
20A	2A	1mA	± (2.5%+10)
	20A	10mA	± (2.5%+5)
500A	200A	100mA	± (2.5%+5)
	500A	1A	± (2.5%+10)

200uA~200mA overload protection: 0.2A/250V fuse tube; Frequency range: 50Hz~60Hz

Frequency range for the clamp measurement above 20A: 50Hz

Display: mean (Sine virtual value)

Resistance (Ω)

Range	Resolution	Accuracy
200Ω	0.1Ω	±(1.0%+3)
2kΩ	1Ω	±(1.0%+2)
20kΩ	10Ω	
200kΩ	100Ω	
2MΩ	1kΩ	
20MΩ	10kΩ	±(1.2%+5)

Max. open circuit voltage: 0.5V

Overload protection: 250VDC or AC virtual value.

Diode/continuity

Range	Display value	Test conditions
⊳|	Approximate diode forward voltage drop displayed	Forward test current approximately 0.6mA(DC); inverse test voltage approximately 1.5V(DC)
)))	When the ON resistance is less than approx. 50Ω, the buzzer inside will sound.	Open circuit voltage approx. 0.5V

Overload protection: 250VDC or AC virtual value.

V. Notices

* Before use, check if the battery voltage is enough. If the battery voltage is insufficient, the display will show the symbol of "⊟". In such case, test after the battery is replaced. When the current at uA or mA level is measured, if the input has no response, check if the fuse tube inside is broken. When replacing the fuse tube or the battery, make

sure the test probe is disconnected from the tested circuit and always use the fuse tube or battery of the same specifications and type.

Warning: No measurement is allowed when the rear cover or the battery cover is not installed properly in order to ensure safety!

* The symbol "⚠" on the test probe panel indicates the input voltage or current cannot exceed the indicated value. It is possible to measure (display) higher voltage or current, but the meter may be damaged!

* Before measurement, make sure that the function switch is turned onto the gear to be measured.

* When the DCV or ACV is above 36V, the finger cannot exceed the gear position of the test probe.

* Press the D-H keys to power the meter on, then the auto power off function will be cancelled.

VI. Use Instructions (Note: V/Ω/⊣▶⊢/mA jack denoted with V/Ω*, not repeated hereinafter):

DCV Measurement

1. Insert the black test probe into the COM jack and the red test probe into the V/Ω* jack.

2. Set function switch in the DCV position.

3. Connect the test probe onto the power supply or load to be tested, then the display will show the measurement result and the voltage polarity of the point where the red probe is in.

ACV Measurement

1. Insert the black test probe into the COM jack and the red test probe into the V/Ω* jack..

2. Set the function switch in the ACV position.

3. Connect the test probe onto the power supply or load to be tested.

Current Measurement

1. Estimate the current to be tested. If it is below 200mA, insert the black test probe into the COM jack and the red test probe into the V/Ω* jack..

2. Set the function switch in the current position. If the tested current is less than 2mA, set the function switch in 2000uA position.

3. Switch AC and DC with F-S key.

4. Serially connect the test probe onto the power supply or load to be tested, then the display will show the measurement result. If the measured current is DC, then the display will at the same time show the current polarity of the point where the red test probe is. (For uA and mA level and test probe measurement), if the AC to be measured is above 200mA, measure it with clamp (which cannot be used for DC measurement). During measurement, press the trigger to open the clamp to bite the load to be tested or one conductor of the power supply; if two or more than two conductors are bitten, the measurement will become void. In order to ensure accuracy, the measured conductor shall be located in the middle of the clamp. The display shows the measurement result. If the current is unknown before measurement, set the function switch in 500A position and then gradually lower it.

Note: When the clamp is used to measure the current above 10A, the buzzer will sound, which is normal.

(Warning: When the test probe is used for measurement, do not input DC or AC above 200mA. When the clamp is used to measure the AC about 500A, do not last more than 20s. In addition, do not measure AC above 550A; otherwise, the meter may be damaged!)

Resistance Measurement (Ω)

1. Insert the black test probe into the COM jack and the red test probe into the V/Ω* jack.

2. Set the function switch in the Ω position.

3. Connect the test probe onto both ends of the resistor to be tested and read the measurement result on the display. In case of open input end or overload, OL will be displayed.

Note: When 200Ω is used, it is necessary to short circuit the test probe to test the resistance of the lead, which will be deducted from the actual test.

Diode Measurement

1. Insert the black test probe into the COM jack and the red test probe into the V/Ω* jack..

2. Set the function switch in diode position; connect the red test probe onto the positive of the tested diode while the back test probe onto the negative, then the display will show the forward voltage drop of the diode; in case of open input end or inverse measurement, OL will be displayed.

Continuity Measurement

1. Insert the black test probe into the COM jack and the red test probe into the V/Ω* jack..

2. Set the function switch in the diode position, press the F-S key to enter the continuity measurement state; connect the test probe onto both ends of the tested circuit, then the display will show the resistance of the tested circuit. If the resistance is less than about 50Ω, the buzzer will sound; in case of open input end or inverse measurement, OL will be displayed.

VII. Meter Maintenance

This meter is a precise digital electronic meter; thus never replace circuits or components without permission and pay attention to the following points, which is very helpful for you to use your beloved meter!

1. Do not input AC virtual value or DCV above 600V.

2. Do not measure the voltage when the function switch is located in Ω or diode position.

3. Do not place the meter in the place of high temperature and high humidity.

4. After the measurement is over, be sure to power it off. If it is idle for long, do remove the battery.

5. Do not change gears during voltage or current measurement;

6. Be sure to clean the housing with wet cloth and mild detergent rather than abrasive or solvent.

VIII. Accessories:

User's manual 1pcs

Test lead 1 set

This user's manual is subject to any change without further notice.

The content in this user's manual is deemed correct; if you find any mistake, omission, etc, please contact the manufacturer.

We will not be held liable for any accidents or harms caused due to your wrong operations.

The functions set forth in this user's manual shall not be regarded as reasons for applying this product for special purposes.